RGS ELECTRONICS
008A MICROCOMPUTER KIT
Preliminary Data

The RGS Electronics 008A Microcomputer Kit includes everything necessary to build the computer EXCEPT the cabinet, screws, nuts and assorted hardware, and the line cord and fuses. At this time, the kit is built on a 60-socket wire-wrap board measuring 8⅛" x 7½" x 1 1/8"; in the future, it will be built on p.c. boards. The manual for the wire-wrapped kits includes information on where to obtain wire-wrap tools and wire.

The kit includes the 8008 CPU chip, and either 2102's or 2602's for the memory, which is 1024 x 8 bits and is expandable. The kit also includes all the other TTL ICs necessary to the operation of the kit, and all the power supply parts except the fuse. The power supply is capable of +5 volts at 5 amps maximum, and -9 volts at 60 milliamps. The front panel LEDs and switches are also provided.

The front panel on a working 008A can be used to load memory and to debug programs. The manual contains, in addition to all the construction information, a short course on programming the 8008, and directions for interfacing to most peripheral devices. The 008A kit has an I/O bus, instead of the arrangement of I/O ports more usual with the 8008. This bus will handle up to 256 peripheral devices; the I/O instructions have been changed to reflect this change in structure.

The manual includes membership for one year in a software exchange program: we send you any new programs we develop, and you the users send us any programs you develop; we will act as a clearinghouse, making all the programs available to everyone. This service is available with purchase of the manual alone, as well as with the computer kit.

PRICES

008A Microcomputer Kit $375.00
(We offer a 20% discount on orders over $250.00, so the actual price for cash is $300.00.)

008A Microcomputer Manual $25.00
(Cost of manuals purchased separately may be applied to the cost of kits purchased later, without a manual.)

ORDER FROM: RGS Electronics, 3650 Charles St. Suite K, Santa Clara, California 95050. Telephone: (408) 247-0158
NO C.O.D.s!

RGS ELECTRONICS

ttl

7400	Quad 2-in NAND	$ .20
7401	Quad 2-in NAND (O.C.)	.20
7402	Quad 2-in NOR	.20
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7404	Hex inv.	.25
7405	Hex inv. (O.C.)	.25
7406	Hex inv. buffer	.45
7407	Hex buffer	.45
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7409	Quad 2-in AND (O.C.)	.25
7410	Triple 3-in NAND	.20
7411	Triple 3-in AND	.30
7413	Dual Schmitt	.85
7416	Hex inv. buffer	.45
7417	Hex buffer	.45
7420	Dual 4-in NAND	.20
7430	8-in NAND	.20
7432	Quad 2-in OR	.30
7437	Quad 2-in NAND buffer	.50
7438	Quad NAND buffer (O.C.)	.50
7440	Dual 4-in buffer	.20
7442	Decimal dec	1.10
7446	7 Segment dec	1.45
7447	7 segment dec	1.45
7448	7 segment dec	1.45
7450	AND-OR-invert	.20
7451	AND-OR-invert	.20
7453	AND-OR-invert	.20
7454	AND-OR-invert	.20
7473	Dual J-K	.45
7474	Dual D	.45
7475	Quad latch	.80
7476	Dual J-K	.50
7483	4-bit adder	1.10
7485	4-bit compare	1.40
7486	Quad 2-in OR	.50
7489	64-bit RAM	2.90
7490	Decade counter	.80
7492	Divide-by-12	.80
7493	4-bit counter	.80
7495	4-bit shift reg	.90
7496	5-bit shift reg	.85
74107	Dual J-K	.50
74121	Monostable	.60
74122	Monostable	.60
74123	Dual monostable	1.10
74125	3-state quad buf	.65
74126	3-state quad buf	.65
74141	Decimal Decoder	1.25
74150	Multiplexer	1.70
74151	Multiplexer	1.00
74153	Multiplexer	1.40
74154	Demultiplexer	1.70
74157	Multiplexer	1.40
74161	4 bit counter	1.50
74163	4 bit counter	1.70
74164	8-bit shift reg	2.00
74165	Shift reg	2.00
74166	8-bit shift reg	1.75
74174	Hex latch	2.20
74175	Quad latch	2.20
74176	Decade counter	1.60
74177	4-bit counter	1.35
74181	Arith logic unit	3.90
74192	Dec u/d counter	1.50
74193	4-bit u/d counter	1.45
74195	4-bit shift reg	1.00

more ttl

DM8820	Dual line rec.	2.00
DM8830	Dual line driver	2.00
DM8833	3-State xceiver	2.00
DM8836	Quad NOR rec.	.45
9601	Monostable	.90

low power

74L00	Quad 2-in NAND	$ .35
74L02	Quad 2-in NOR	.35
74L03	Quad 2-in NAND (O.C.)	.35
74L04	Hex inv	.35
74L72	J-K	.50
74L73	Dual J-K	.70
74L78	Dual J-K	.70
74L86	Quad ex-OR	.75
74L90	Decade counter	1.50
74L98	4-bit latch	2.50

CMOS

74C00	4-in NAND	$ .60
74C02	Quad 2-in Nor	.60
74C04	Hex inv.	.85
74C10	Triple 3-in NAND	.60
74C20	Dual 4-in NAND	.60
74C73	Dual J-K	1.65
74C74	Dual D	1.25
74C76	Dual J-K	1.75
74C107	Dual J-K	1.75
74C151	Multiplexer	3.30
74C160	4 bit counter	3.25
74C161	4 bit counter	3.25
74C162	4 bit counter	3.25
74C163	4 bit counter	3.25
74C195	4 bit shift reg.	3.15
CD4001	Quad 2-in NOR	.55
CD4002	Dual 4-in NOR	.55
CD4008	4 bit adder	4.00
CD4009	Hex buf (inv)	.75
CD4010	Hex buf	.75
CD4011	Quad 2-in NAND	.55
CD4012	Dual 4-in NAND	.55
CD4013	Dual D	1.10
CD4014	8-bit shift reg.	4.00
CD4015	Dual 4-bit shift reg.	4.00
CD4016	Quad bilat. switch	1.10
CD4017	Dec count/div.	3.20
CD4018	Div.-by-N counter	3.25
CD4019	Quad AND-OR select	1.25
CD4020	14 bit ripple-count.	3.50
CD4021	8 bit shift reg.	4.00
CD4023	Triple 3-in NAND	.55
CD4024	7-bit counter	2.75
CD4025	Triple 3-in NOR	.55
CD4027	Dual J-K	1.50
CD4029	Preset u/d count.	6.00
CD4030	Quad excl.-OR	.55
CD4035	4-bit shift reg.	2.50
CD4037	Triple AND-OR pairs	2.95
CD4040	12-bit ripple count.	5.00
CD4042	Quad D Latch	2.95
CD4044	Quad NAND R/S Latch	2.95
CD4049	Hex buf/conv (inv)	1.10
CD4050	Hex buf/conv	1.10
CD4116	Quad bilat-switch	1.25

schottky

74S00	Quad 2-in NAND	$ .60
74S03	Quad 2-in NAND (O.C.)	.60
74S22	Dual 4-in NAND (O.C.)	.60
74S65	AND-OR-invert	.60
74S206	256 bit RAM	3.00

memories

MM1101	265-bit static RAM	$ 2.00
MM5203Q	Reprogr. ROM, 256X8	25.00
MM5260	1024-bit dynamic RAM	2.50
2102	1024-bit static RAM, NMOS +5v supply	10.00
8223	32X8 PROM	5.00

computer

8008	CPU chip	$62.50

CALCULATOR CHIPS

9V operation - internal Osc.

MM 5736	6 digit + - X ÷	$2.95
MM 5738	8 digit floating point + - X ÷ % display blanking	3.95
MM 5739	9 digit + - X ÷	3.50

CLOCK CHIPS

MM 5314	6 digit 12/24 HR 50/60 Hz	$6.95
MM 5316	Alarm clock 12/24 HR 50/60 Hz	7.50

voltage regulators

300T	Pos., adj.	$ .75
304T	Neg., adj.	.90
305T	Improved 300T	1 00
309T	+5v., .2A	1.05
309K	+5v., 1A	1.65
320K-5.2	-5.2v., 1A	2.00
320K-15	-15v., 1A	2.00
340K	Pos., 1A (6v, 8v, 12v, 15v, 18v, 24v)	2.25
340P	Pos., 1A (5v, 6v, 8v, 12v, 15v,18v,24v)	2.00
550D	Pos., adj.	.80
723D	Pos., adj.	.80
723T	Pos., adj.	.90
4194D	+ and - adj., tracking	2.25

op amps

301T	Ext. comp.	$ .40
301M	Ext. comp.	.35
307T	Int. comp.	.40
307M	Int. comp.	.30
318T	Hi-speed	1.50
324D	Quad int. comp.	1.65
709D	Ext. comp.	.20
709T	Ext. comp.	.30
709M	Ext. comp.	.25
739D	Dual ext. comp.	1.00
741D	Int. comp.	.35
741T	Int. comp.	.50
741M	Int. comp.	.45
748M	Ext. comp.	.40
4131M	Improved 741	1.00
4132M	Micropower 741	1.25
4250T	Programmable	2.25
4250M	Programmable	2.25
5558T	Dual 741	.80
5558M	Dual 741	.75

other linear

114T	Dual NPN xist.	$1.00
302T	Voltage foll. op. amp.	.80
311T	Voltage comp.	1.00
311M	Voltage comp.	1.00
319D	Dual voltage comp.	1.25
339D	Quad comp.	1.65
370T	ACG/squelch amp.	1.25
371T	RF/IF amp.	1.25
380D	Audio power amp.	1.65
382D	Lo-noise stereo preamp.	1.75
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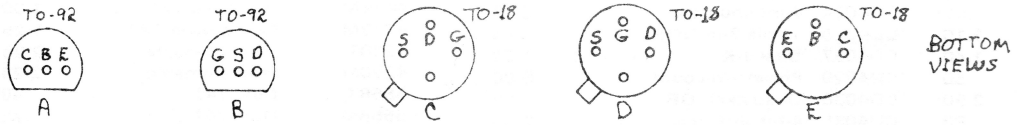
555M	Timer	1.00
556D	Dual 555	1.80
565D	PLL	2.50
566M	VCO	2.10
567M	Tone decoder	2.50
703M	RF/IF amp.	.55
710D	Voltage comp.	.25
711D	Dual voltage comp.	.25
733D	Diff. video amp.	1.50
1303D	Stereo preamp.	.80
1800D	PLL stereo demux.	2.50
3028T	RF/IF amp.	.75
3086D	Xistor array	.45
3900D	Quad amp.	.55
8038D	Function gen.	5.25
5595D	Multiplier	1.50
75450D	Dual periph. driver	.70
75451M	Dual periph. driver	.40
75491D	Quad seg. driver	1.25
75492D	Hex digit driver	1.25

T - TO-5
D - DIP
M - miniDIP
K - TO-3
P - TO-220

FEBRUARY 1975 PRICE LIST

TRANSISTORS

RGS #	BASE DIAGR.	TYPE	min BV_{GSS} (V)	min BV_{CE} (V)	typ Y_{fs} (mmho)	min h_{FE}	min/max I_{DSS} (ma)	max I_C (ma)	max USE FREQ. (MHz)	typ f_T (MHz)	PRICE 1-99 $	PRICE 100+ $
N1	A	NPN Darl.		20		20,000		750		100	.35	.30
N2	A	NPN lo-noise & level		60		50		50		150	.15	.10
N3	A	NPN med. pur.		35		50		750		300	.20	.15
N4	A	NPN 2N3904		40		50		100		400	.15	.10
N5	A	NPN UHF		15		20		20		900	.20	.15
N6	A	NPN RF-IF		30		20		100		500	.15	.10
N10	B	N-ch 2N4416	20		5		1/10		450		.35	.30
N10	C	N-ch 2N4416	20		5		1/10		450		.35	.30
N11	C	N-ch switch	30		(Ron) 35 ohm		5/170		100		.25	.20
N12	C	N-ch GP	40		1.8		.1/10		10		.25	.20
N13	C	N-ch high-imp.	40		.25		.02/1		10		.35	.30
N14	C	N-ch GP	50		3.5		.5/17		50		.25	.20
P2	A	PNP lo-level		60		50		50		300	.15	.10
P3	A	PNP med. pwr.		40		50		500		200	.20	.15
P4	A	PNP 2N3906		40		40		100		700	.15	.10
P7	A	PNP hi-V		100		25		100		200	.25	.20
P8	A	PNP hi-V		150		25		100		200	.30	.25
P11	D	P-ch	30		12		5/90		100		.25	.20
P14	D	P-ch	20		2.5		.3/20		50		.25	.20
2N2222	E	NPN		30		50		500		250	.25	.20
2N2907	E	PNP		40		50		500		200	.25	.20
NPN	E	Gen. Pur.		40		50		100		100	.15	.10
NPN	A	Gen. Pur.		40		100		100		100	.08	.0595
PNP	E	Gen. Pur.		40		50		100		100	.15	.10
PNP	A	Gen. Pur.		40		100		100		100	.08	.0595



CAPACITORS
ALUMINUM ELECTROLYTIC
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	10wv	35wv	50wv
1mfd	$ .10	$ .12	$ .15
2mfd	.10	.12	
5mfd	.10	.12	
10mfd	.11	.13	.16
30mfd	.12	.20	.28
50mfd	.13		
100mfd	.15	.30	.45
200mfd	.20		.70
500mfd	.28	.75	
1000mfd	.50		

.01μf 50wv ceramic disc	$ .05
4.7μf 20wv tantalum	.25
3600μf 40wv computer electrolytic, with hardware	1.50

SOCKETS

	WIREWRAP	SOLDER	COMPONENT CARRIERS
8 pin		$ .25	
14 pin	$ .55	.35	$ .50
14 pin, double width			.30
16 pin	.65	.40	.60
18 pin		.45	
24 pin	1.30	.60	
28 pin	1.40	.70	
40 pin	1.85	1.00	

Wirewrap socket pins, $ .05 ea.; $4/100

SWITCHES

SPDT P.C. mount $ .40

¼ WATT RESISTORS

We have all 10% values $4.00/100, any mix $ .05

RECTIFIERS & DIODES

1A 50PIV silicon rectifier	$ .10
3A 400PIV silicon rectifier	$ .25
1N914 equivalents	$ .08

DOLLAR PACKS

DTL 20 $1.00

Pack of 20 untested DTL DIPs, assorted marked units. Data sheet included.

LED 10R $1.00

Pack of 10 discrete red lens LEDs, various MV5020-series types.

LED 15C $1.00

Pack of 15 discrete clear lens LEDs, various MV5020-series types.

Application note included with each pack.

DISCRETE LEDs

RED

MV10 To-18	$ .08
MV50 ribbon lead	$ .08
Large red lens	$ .20
Small red lens	$ .12

COLORED

MV1, amber	$ .25
MV50 type, amber	$ .25
MV2 T0-18, green	$ .30
MV5222 green	$ .30

INFRARED

ME4 T0-18	$ .10
ME60 ribbon lead	$ .08

7-SEGMENT READOUTS

DL704	.3" Com. cat.	$1.50
DL707	.3" Com. an.	$1.75
MAN84	.27" yellow com. cat.	$2.00

008A MICROCOMPUTER KIT $375.00

The RGS Electronics 008A is a general purpose microcomputer with 1024 words of RAM (minimum), and a bus type I/O arrangement capable of handling up to 256 peripheral devices, instead of the port system more usual with the 8008. The memory is expandable up to 16K words, 2K per card, of RAM or ROM. The I/O parallel interface card can be plugged into the backplane or installed in external cabinets with the I/O devices. The front panel allows the user to view and load memory, step programs to debug software, and stop and start the CPU. Internal interrupt and ready expansion are also available if needed.

The basic kit consists of 6 p.c. boards, and all the ICs and other components necessary to build the microcomputer EXCEPT: the cabinet, screws, nuts and assorted hardware, and the line cord and fuses. Power supply parts and front panel LEDs and switches are included. The board set consists of 2 CPU boards, 1 memory, 1 backplane, 1 front panel and 1 power supply. The 2 CPU boards and the memory board are 4" x 6"; they plug into the backplane which is 4.8" x 6.75". The 4.8" x 6.75" front panel board mounts on the backplane and contains the switches, LEDs, and associated circuitry. The power supply board is 3.5" x 3.5" and mounts back with the transformer and filter capacitor. The capacity of the power supply is +5V at 5A and -12V at 1A. The -9V for the 8008 is derived from the -12V. The entire assembly will fit in a cabinet 5" high, 9" wide and 12" deep; this includes up to 8 plug-in boards. When expanding the 008A to full memory capacity (16K), another backplane board is needed, making the cabinet at least 15" wide.

In addition to all the construction information, the manual contains a short course on programming the 8008, and directions for interfacing to most peripheral devices. Purchase of the manual, either alone or as part of the 008A kit, includes membership for one year in a software and applications exchange program: we send you any new programs and/or applications we develop, and you the users send us any programs you develop, and we will act as a clearinghouse, making all the programs available to everyone.

Each 1K of RAM takes 8 2102's (price listed elsewhere); one 008A-3 RAM board holds 2K of RAM, Each PROM board will hold 8 5203Q PROMs (price listed elsewhere).

008A Microcomputer Manual $25.00

No discount on manual when bought separately. If you buy a manual, then a kit, deduct the price of the manual from the price of the kit, AFTER taking the 20% discount for cash. See rest of Flyer for memory & CPU chips.

P.C. BOARDS

(*Will plug into CPU backplane; includes socket & hardware)

008A-1* CPU	$21.00
008A-2*	$21.00
008A-3* RAM	$21.00
008A-4 Backplane	$12.00
008A-5 Front panel with switches	$22.00
008A-5 Front panel without switches	$15.00
008A-6 Power supply	$12.00
008A-7* Parallel interface	$21.00

COMING SOON:

TV adapter kit for CRT output;
Teletype interface;
PROM programmer;
Scientific calculator I/O.

PERIPHERALS

008A-K ASCII Keyboard Input Kit $75.00

Includes p.c. board, switches, and all electronic components, and a parallel interface kit.

008A-C Audio Cassette Adapter $50.00

Includes p.c. board, all electronic components, and a parallel interface kit; audio cassette deck NOT included. Read and write data rate of 27 eight-bit words per second.

008A-P Parallel Interface Kit $30.00

Includes p.c. board and components to interface peripheral devices to the 008A. Each kit will handle status, control, bus addressing, and one input and output (all eight bits) for one peripheral device.

These kits may be powered either from the main computer power supply or from an external supply; extra power supplies not included. The 008A-K and the 008A-C take +5V and -12V; the 008A-P needs +5V. Current requirements are less than .25A @ +5V, less than .1A @ -12V.

"THE CUBE"

"THE CUBE" is small, rugged black sinewave oscillator that can be adjusted to the frequencies required for opening the squelch on subaudible tone guarded systems. Compatible with positive or negative ground systems; very low current drain. Small, light weight, no moving parts. .5" x .6" x .8"

Power requirements
Voltage . . . . . 8 - 18V DC
Current . . . . . Less than 3ma @ 15V

Frequency range . . . . May be adjusted from 98 - 251 HZ*

Output level p/p . . . . Not less than .7 x DC voltage

Harmonic distortion . . Less than 2%

Operating temperature range . 0 - 50° C

Frequency drift . . . . .01 Hz

Temperature stability . .026 Hz/°C

*Depending on the trim resistor; the CUBE may be modified for use at lower frequencies if desired, down to around 65 Hz. These modifications must be done at the factory, so please specify if you want a lower frequency CUBE, even if you plan to set the frequency yourself. 2-wk. delay on lo-freq. CUBEs.

PRICE

$19.95 each. Multiple orders subject to our usual cash discount schedule. **$5.00 extra** if we set the frequency for you.

POWER SUPPLIES

PS 5-1 $8.00

5 volt 1 amp regulated power supply kit with p.c. board and instructions. Board measures 2"x5"; completed kit is 2" high. Transformer has internal r.f. shield.

PS 25-1 $12.95

0-25 volt 1 amp power supply kit with adjustable current limiting; has remote sensing and remote programming for voltage & current. Instructions included. All parts supplied except chassis & meter(s).
Kit of parts with schematic & app. note
Mail orders add $2.00 postage

This supersedes all previous price lists. Prices subject to change without notice.

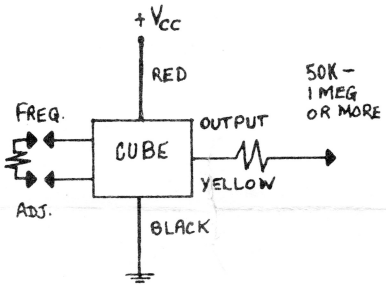
Anything you don't see on this list is a little harder to get. Please write for prices and availability of items not listed.

TERMS OF SALE: $1.00 handling charge on all mail orders under $10.00. California residents please add SALES TAX. Cash in advance preferred; no C.O.D.'s. We will accept purchase orders from organizations whose paperwork requirements are such that they cannot send cash; in that case, all discounts (see below) are contingent on payment within 10 days of receipt of invoice. We pay surface postage on all orders to U.S. and Canadian addresses.

ALL SALES FINAL.

CASH DISCOUNTS: 10% off all orders over $25.00; 20% off all orders over $250.00. As noted above, all discounts are contingent on payment within 10 days on purchase orders.

RETURNS: Returned merchandise MUST be accompanied by the sales receipt or a photocopy of it.



CAUTION: IF POWER IS APPLIED INCORRECTLY, WITHOUT CURRENT LIMITING, THE CUBE WILL BE DESTROYED.

WARRANTY

RGS Electronics, hereafter referred to as RGS, warrants that, for a period of 90 days from date of shipping, any RGS kit will be free of defects in parts, and any RGS component will be functional at room temperature. RGS's obligation is limited to those parts which are returned transportation prepaid to RGS without further damage, and in the judgement of RGS are either originally defective or have become defective in normal use. The warranty does not apply to any parts damaged in the course of handling, assembling, or wiring by the customer, or damaged due to abnormal usage or in violation of instructions or reasonable practice, or further damaged to a consequential degree in return shipment. The foregoing warranty is made only to the original customer, and is and shall be in lieu of all other warranties, whether expressed or implied, and of all other obligations or liabilities on the part of RGS. In no event shall RGS be liable for any anticipated profits, consequential damages, loss of time, or other losses incurred by the customer in connection with the purchase or operation of RGS products.

RGS ELECTRONICS

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